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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/965,312	09/27/2001	Michael J. Melfi	01RE156 REEL:0025	3915

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11/29/2002

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EXAMINER

MULLINS, BURTON S

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 11/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/965,312

Applicant(s)

MELFI, MICHAEL J.

Examiner

Burton S. Mullins

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-27 is/are allowed.
- 6) ☒ Claim(s) 1 and 6 is/are rejected.
- 7) ☒ Claim(s) 2-5 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on February 25, 2002 has been considered by the examiner.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Byrd (US 6,091,173). Byrd teaches a bearing system comprising: a frame 20 or 22; a shaft 12; a rotor assembly 42 mounted on the shaft; and at least one bearing 26 or 28 supporting the shaft in the frame. The feature of “a capacitance enhancement mechanism by which rotor to frame capacitance is increased” is inherent in Byrd since shaft shield 48 or 50 increases the effective surface area between the rotating shaft 12 and the grounded frame surface 20 or 22 attached to the respective shield.
4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Dschen (US 3,176,286). Dschen teaches a bearing system comprising: a frame or turbine casing 9; a shaft 1; a rotor assembly (not shown, inherent to turbo-machine) mounted on the shaft; and at least one bearing 3 or 4 supporting the shaft 1 in the frame 9 (Fig.1). Dschen further teaches “a capacitance enhancement mechanism by which rotor to frame capacitance is increased”

comprising the air gap separating flange part 1a from metallic layer 5 of annulus 6, which forms an electrical capacitance (c.2, lines 65-58).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Byrd or Dschen. Regarding claim 6, both Byrd's shield and Dschen's capacitor inherently reduce common mode voltage on the shaft; however, there is no explicit teaching as to "a scaling factor" of this reduction. However, in Byrd, this would depend on the size of the shield, e.g., how long along the shaft axis the shield/s extended, which would involve ordinary engineering design. Similarly in Dschen, the breadth of the metallic layer 5 as well as the size of the air gap would be subject to "scaling" per engineering design as suggested at c.2, lines 65-68.

Allowable Subject Matter

7. Claims 2-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Neither Byrd's shield nor Dschen's flange/metal layer/annulus structure can be said to comprise "a labyrinth, the labyrinth comprising a ground member, a

shaft-voltage reducer, and one or more gaps disposed between the grounded member and the shaft-voltage reducer" (claim 2).

8. Claims 7-27 are allowed. The key feature of independent claims 7, 14 and 22 is the recitation of "enhanced surface areas" or "enhanced surfaces" forming the capacitive enhancement mechanism. "Enhanced surfaces" are defined as surfaces provided with an interleaving structure. See specification p.9, lines 12-14. For example, in Fig.2, the "enhanced surfaces" 110 comprise grounded member 104 and shaft-voltage reducer 106 having "interleaving" surfaces forming a labyrinth. Neither Byrd nor Dschen teach such an "interleaving" structure to their capacitive enhancement devices.

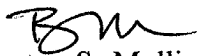
Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 305-7063. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 305-1341 for regular communications and 305-1341 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0956.

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Burton S. Mullins
Primary Examiner
Art Unit 2834

bsm
November 22, 2002